Listing of Claims:

1. (previously presented) A device for navigating an instrument in a body volume that is subject to a spontaneous movement that can be described by a movement parameter (E), comprising:

a) a locating device for measuring a location (r) of the instrument;

b) a sensor device for measuring the movement parameter (E); and

c) a data processing device coupled to the locating device and the sensor device, wherein the data processing device comprises a movement model that describes, with respect to a reference phase (E_0) of the movement parameter, a spontaneous movement field or vectorial displacement (Δ) to which interpolation nodes of the body volume are subject in the various phases of the movement parameter (E), wherein with (i) the aid of the movement model, (ii) a current measured location (r) and (iii) an associated current movement parameter, the data processing device calculates an estimated movement-compensated location ($r + \Delta$), corresponding to the current measured location (r) plus the vectorial displacement (Δ), of the instrument that the instrument would have in the reference phase (E_0) of the spontaneous movement field.

2. (previously presented) The device as claimed in claim 1, wherein the data processing device is designed to reconstruct the movement model from measured values for the location of interpolation nodes and associated movement parameters (E).

3. (previously presented) The device as claimed in claim 2, further wherein the data processing device is designed to supplement the measured movement of the interpolation nodes in the movement model by interpolation.

4. (previously presented) The device as claimed in claim 2, further wherein the data processing device is designed to determine measured values for the location of interpolation nodes from a series of three-dimensional images of the body volume, wherein the series of three-dimensional images are obtained from at least one of X-ray, CT and MRI recordings.

5. (previously presented) The device as claimed in claim 2, wherein the measured values for the location of the interpolation nodes of the body volume correspond to locations (r), measured with the locating device, of the instrument.

6. (previously presented) The device as claimed in claim 5, wherein the measured locations (r) of the instrument are obtained without moving the instrument relative to the body volume.

7. (previously presented) The device as claimed in claim 1, further wherein the data processing device comprises a memory containing a static image of the body volume and is designed to determine the estimated movement-compensated location ($r + \Delta$), for the reference phase (E_0), of the instrument in the static image.

8. (previously presented) The device as claimed in claim 1, wherein the sensor device comprises an ECG apparatus and/or an apparatus for determining the respiration phase.

9. (previously presented) The device as claimed in claim 1, wherein the locating device is designed to determine the location of the instrument with the aid of magnetic fields and/or with the aid of optical methods.

10. (previously presented) A method of navigating an instrument in a body volume that is subject to a spontaneous movement that can be described by a movement parameter (E), the method comprising:

a) measuring a location of interpolation nodes of the body volume and associated movement parameters (E) in different phases of the spontaneous movement;

b) reconstructing a movement model for the body volume from said measured values of the location of interpolation nodes and associated movement parameters, wherein the movement model describes, with respect to a reference phase (E_0) of the movement parameter, a spontaneous movement field or vectorial displacement (Δ) to which interpolation nodes of the body volume are subject in the various phases of the movement parameter (E);

c) measuring a location (r) of the instrument and an associated movement parameter (E); and

d) calculating, with the aid of (i) the movement model, (ii) a current measured location and (iii) an associated current movement parameter, an estimated movement-compensated position ($r + \Delta$), corresponding to the current measured location (r) plus the vectorial displacement (Δ), of the instrument in the reference phase (E_0) of the spontaneous movement field.